

## Hamline University DigitalCommons@Hamline

---

School of Education Student Capstone Projects

School of Education

---

Fall 2017

# Advancing Communication And Collaboration Between Multilingual And Special Education Departments: A Web-Based Model To Serve Dual Eligible Students

Stacy Severson  
*Hamline University*

Follow this and additional works at: [https://digitalcommons.hamline.edu/hse\\_cp](https://digitalcommons.hamline.edu/hse_cp)



Part of the [Education Commons](#)

---

### Recommended Citation

Severson, Stacy, "Advancing Communication And Collaboration Between Multilingual And Special Education Departments: A Web-Based Model To Serve Dual Eligible Students" (2017). *School of Education Student Capstone Projects*. 97.  
[https://digitalcommons.hamline.edu/hse\\_cp/97](https://digitalcommons.hamline.edu/hse_cp/97)

This Capstone Project is brought to you for free and open access by the School of Education at DigitalCommons@Hamline. It has been accepted for inclusion in School of Education Student Capstone Projects by an authorized administrator of DigitalCommons@Hamline. For more information, please contact [digitalcommons@hamline.edu](mailto:digitalcommons@hamline.edu), [lterveer01@hamline.edu](mailto:lterveer01@hamline.edu).

ADVANCING COMMUNICATION AND COLLABORATION BETWEEN  
MULTILINGUAL AND SPECIAL EDUCATION DEPARTMENTS: A WEB-BASED  
MODEL TO SERVE DUAL ELIGIBLE STUDENTS

by

Stacy Severson

A capstone submitted in partial fulfillment of the requirements for the degree of  
Master of Arts in English as a Second Language

Hamline University

St. Paul, MN

July 2017

Primary Advisor: Laura Halldin

Reader: Kate McNulty

Reader: Michelle Lee-Reid

## ACKNOWLEDGEMENTS

To my English learners, whose strength and life stories have forever changed me and motivate me to wake up each morning wanting to do my best. To my colleagues who have been steadfast companions and cheerleaders, especially Michelle Lee-Reid, Jeff Johnson, and Brian Nielsen. To Kate McNulty, my advisor who has been there every step of the way. To my parents and my son Kelly, without whom this path would have been meaningless. And finally, to my lovely fiancé, Eric, who came into my life in the thick of it and has held my hand, edited, listened, offered advice, and called me his muse. Thank you, to all who have believed in me...

## TABLE OF CONTENTS

ABSTRACT.....	1
ACKNOWLEDGEMENTS.....	2
TABLE OF CONTENTS.....	3
CHAPTER ONE: Introduction.....	4
Context.....	5
Rationale.....	8
Chapter Overviews.....	9
CHAPTER TWO: Review of the Literature.....	11
Terminology.....	12
A History of ESL Education.....	14
English Language Proficiency.....	18
The History of Special Education.....	19
English Language Learners in Special Education.....	20
Minnesota Categories of Disability.....	22
Autism Spectrum Disorders.....	24
Down Syndrome.....	29
Speech or Language Impairments.....	32
Need for Research.....	33

CHAPTER THREE: Project Description.....35

    Project Rationale.....37

    Project Description.....38

    Design Framework.....40

CHAPTER 4: Reflection.....43

    Project Development.....47

    Reflections as a Researcher, Writer, and Learner.....48

    Future Implications and Limitations.....50

    Further Research.....52

REFERENCES.....55

## CHAPTER ONE

### INTRODUCTION

In this first chapter, I provide the rationale for doing my culminating project and the context from which I arrived at my research question. According to the Minnesota Report Card of 2017 Enrollment by Population, the number of English learners (ELs) enrolled in public schools in Minnesota number 72,335, or 8.3% of the public school population. Additionally 134,331, or 15.4% of Minnesota's enrolled public school population, qualify for special education services (MDE, 2017a). Many of these children qualify under the disability categories of Autism Spectrum Disorders, emotional disturbance, intellectual disability, specific learning disabilities, and speech or language impairment (IDEA 2011 Child Count, 2011). Of specific relevance to this project is that of the English learner and special education populations enrolled in Minnesota, the Fall 2016 Report on English Learner Education in Minnesota (2017b) reports that 8,624, or 11.9% of the identified English learners qualify for both EL and special education services.

This number alone is one of many key factors that led me to my research question: *How can communication between ESL teachers and special education staff be improved to better serve dual eligible students?* Other factors that also led to this culminating project will be laid out in the context section.

### **Context**

In 2009, when I first became an ESL teacher, I had a kindergarten student who had a learning disability due to contracting *E. coli* at the age of three, and I was asked to be part of his IEP (Individualized Education Plan) team. I met with the Dual Eligible District Program Facilitator (DPF) for our school, who was the first to inform me about students who were dually eligible. I was curious whether a disability like his would affect his English language acquisition, and how my instruction might need to change for him to succeed. Fifteen years earlier I received my Bachelor's degree from the University of Minnesota in Child Development specializing in delayed and disordered language acquisition, that is, how children learn language, the stages that a typically developing child goes through, and what can go wrong in the process, but in this program, I only studied how one learns his or her native language, and not how a second or additional language is acquired.

Most recently, I have worked at an elementary school with a significant number of students who qualify for both EL and special education services. At my school, we have four DCD, or Developmental Cognitive Disabilities classrooms that are at a Federal Setting 3, or Level 3, that is 60% or more of student time is spent in a classroom that is self-contained with a higher teacher – student ratio. Of the 33 students in Level 3 classrooms who are labeled as DCD or PHD (Physical and Health Disabilities), 18 (55%) also come from a home where a language other than English is spoken. In the state of Minnesota, these students are called Dual Eligible (DE).

When I first started working at this school, I asked about EL service delivery to the DE students, and the response was, “we try to see the students when they are in their mainstream classroom,” but services are mostly delivered indirectly. This to me sounded like EL service needs were perhaps legally being met through consultative service, but that the best interest of each student, with respect to individual capacity for speaking, listening, reading, and writing in English, was likely not being considered.

The evolution of my service delivery began with reading IEPs, and meeting with the DCD teachers to discuss the language comprehension and production for each of the DE students. The answers I received ranged from, “nonverbal; he responds positively by smiling when he hears a soft voice”, to “speaking skills comparable to a native English speaker.” It was clear to me that for some, service would be delivered indirectly or through consultation, while others would best be served through direct EL instruction.

I have spent a substantial amount of time in the past two years researching disabilities ranging from Down syndrome, ASD (Autism Spectrum Disorders) and various other DCDs, to teaching language to a child who is deaf or hard of hearing. I have considered how to deliver service to a child who is mute, but would still benefit from direct English instruction to facilitate comprehension, even though traditional production may never develop, but rather be replaced with augmentative or alternative communication, such as signing or using a communication board.

The next step was determining how each individual student would best be served. How many minutes a week would I see them, and should it be a pull-out (into my classroom) or push-in (into the student’s classroom), collaborative model? What model



of collaboration works best? I thought about what information I could offer to those DCD teachers for whom students would be served indirectly. Could I find culturally specific articles on medical, educational, and social beliefs or traditions?

I then thought about how to provide direct EL service. I knew that teaching English could potentially look different between, for example, a child with Down syndrome as compared to a typically developing English learner. I frequently came back to the guiding thoughts, which led me to my research question: what resources exist to assist me in best meeting the needs of those DE students who would benefit from direct EL services? I feel I have a small advantage perhaps, over the average ESL teacher, by having taken classes in child development and disorders, but I still lack the resources I need, to feel I am doing my job to the best of my ability.

This past year has also been eventful in bringing me to my research question. In the middle of the school year, our school's special education DPF asked if she and the English learner and dual eligible DPFs could come and observe me. The DPFs had heard that I was going into our Level 3 DCD classrooms every day, and wanted to see what I was doing, and how I was collaborating with the DCD teachers. They also asked if I, along with one DCD teacher would be willing to pilot a new Dual Eligible Service Plan. I had been meeting once a week with this teacher and one of the Speech Language Pathologists to determine language needs, plan lessons, and streamline the process for all involved.

In summary, my path has been leading to this capstone project since long before I started teaching at my current school. I have discovered that there is a wealth of

information on teaching students who qualify for EL services, *and* on teaching students who qualify for special education services, but that it is difficult to find sources that will lead me to better instruct my students who qualify for both. In the best interest of these students, I feel that there needs to be comprehensive communication and collaboration between the ESL and special education teachers to meet the unique needs of each individual.

### **Rationale**

There is a need for increased communication between ESL and special education departments, not only in my district, but also after initial research, in school districts across the country. In over 16 years of teaching, I have come to determine that the ESL teacher frequently knows little about special education, and the special education teacher can likely be unfamiliar with the process of how one learns a second language.

According to an article published by the Minnesota Department of Education entitled English Learner Education in Minnesota: Fall 2016 Report, “being identified for special education services must not be a cause for removal from English learner services, regardless of disability or severity, unless the child has demonstrated proficiency in English.” (MDE, 2017b). We as teachers of English learners have a mandate to provide services until a student is deemed proficient, but lack support on how to best serve dual eligible students. The training I have received has been minimal, and most if not all information I have received has been due to a proactive approach.

The plan for my culminating project was the creation of a website that will prove useful for ESL teachers to learn about special education, from the various educational

subcategories or medical diagnoses therein (e.g. ASD, or Autism Spectrum Disorders), and what the sequelae can entail when a child is also learning English as a second language. The main goal of my project is to provide information to help familiarize the ESL teacher with student language features that arise due to disability or disabilities, in order to improve delivery of direct and consultative EL service.

### **Chapter Overviews**

In Chapter One: Introduction, I addressed the context by which I came to my research question, and the rationale for why I find it so important, not only for improving my craft, but also because there is clearly a need within my district and also in the wider ESL teacher community. Chapter Two contains the literature review of research where I synthesize for understanding, the various facets of special education and how they may affect an English learner. I begin with a few paragraphs on the terminology I chose to use in this paper, and then follow with a brief history of ESL instruction and special education instruction, noting significant laws that have been passed which directly affect ELs and students with disabilities. I then refer to literature regarding dual eligible students, touching only briefly upon the fact that ELs are overrepresented in special education. There are several schools of thought around why this occurs, and suffice it to say, it bears relevance but is not directly related to the project I have undertaken. I also mention the Minneapolis Somali Autism Spectrum Disorder Prevalence Project. This is an important project in many ways, as will be mentioned in Chapter Two: Review of the Literature.

I then look at several specific disabilities, such as ASD, Down syndrome, and speech or language impairments, and not only how native language learning can be affected by these disabilities, but also how they can influence second language learning. While these are only three of a great many of diagnoses in which disordered language acquisition can appear, it is beyond the scope of this paper to discuss more. My goal was to design a much more comprehensive website, that is a living document and always growing.

Chapter Three: Project Description provides a description of my project, with rationale for choosing to design a website as my culminating project. I discuss the design framework that I chose in my approach to designing a website.

In Chapter Four: Conclusion, I discuss the completion of the project, how designing the website went and what I learned through the process. I reflect upon my project as a whole, with implications, further actions and any limitations I came across in completing my project.

## **CHAPTER TWO**

### **REVIEW OF THE LITERATURE**

#### **Research Question**

The question guiding my research is: *How can communication between ESL teachers and special education staff be improved to better serve dual eligible students?*

#### **Introduction**

The purpose of this project is to provide a web-based tool that will be a repository of information for ESL teachers to better understand the language of a student who qualifies for both English learner and special education services.

In the communication disorders, linguistics, and child development courses I took, only first language (L1) acquisition was addressed. Then after getting my teaching license, and later receiving an additional license to teach English learners, there were no courses that discussed students who also qualify for special education. In nearly two decades of teaching, I have discovered that while special education and English as a Second Language (ESL) teachers are trained extensively to serve their students, they rarely know about the other department. Each school in my district has a DPF (District Program Facilitator) for special education, one for ESL and one for dual eligible students. These people have been a wealth of information, from meeting with me to discuss

language goals for the IEP, to instructional strategies for working with students with disabilities, but they also oversee many schools, and are therefore stretched thin.

This chapter begins with a brief section on terminology, and then an overview of federal laws that have historically changed how English learners and students with disabilities are educated in this country. This is important for providing a context into the shape of American schools today. Next I look at English language proficiency, as it is important to provide a framework for what a typically developing child experiences while learning English.

I delve into some issues surrounding English learners in special education, such as overrepresentation, and offer some of the reasons why this occurs. This is significant to my project in that it is an undeniable phenomenon that has happened as long as there have been English learners in American schools.

I then discuss language learning in children with disabilities, the crux of my culminating project. I only consider a few specific disabilities here due to the scope of the project: Down syndrome, ASD (Autism Spectrum Disorders), and speech or language impairments. I chose to highlight these three because of the frequency of occurrence in my caseload of dual eligible students. There are several other medical diagnoses that will appear on the website designed for my culminating project.

### **Terminology**

In both fields, special education and ESL, there is a plethora of terms and acronyms used, and it is logical to begin with a few words here. Special education is the term used throughout the paper to describe the program, students, and the teachers as a

general term. Special education teachers are only referred differently if they teach in a specific program such as DCD, Developmental Cognitive Disabilities, or ASD, in which case they are referred to as DCD or ASD teachers.

While much clearer to me, there are as many different terms and acronyms in the ESL field. At the national level, LEP (limited English proficient) is still used, even though the state of Minnesota abandoned it years ago, since it is a deficit oriented term and focused on what students can't do as opposed to what they can do. At the state level, until recently ELL (English language learner) was used to describe the student, and still can be seen in literature. There has been a more recent push to shorten ELL to EL (English learner). I use that term when describing the students whom I serve, or if a specific assessment refers to it as such. ESL (English as a second language) is a term that has historically been used to describe the program, the subject as a whole, or the teacher, which is also moving into the EL camp. I am currently finishing my MAESL (Master of Arts in English as a Second Language) at Hamline and still use this acronym to describe what I teach and the department or program as a whole. It is the term most frequently understood when I explain my job to people. The subject I teach is ELD (English language development), which for the most part is collaborative, using a co-teaching model. I also hold pull-out ELD classes for newcomers who need a more intensive and explicit language development.

One last area that needs to be mention is that of ASD, or Autism Spectrum Disorders. Terminology has changed in autism and Asperger syndrome several times. Prior to 1994, the terminology in *Diagnostic and Statistical Manual of Mental Disorders*

(3rd ed., rev.; *DSM-III-R*; American Psychiatric Association, 1987) was PDD, Pervasive Developmental Disorders, which was an umbrella term for autism and Asperger syndrome. In 1994, the DSM-4 (4th ed.; *DSM-IV*; American Psychiatric Association, 1994) was published and Asperger syndrome then became a medical diagnosis of its own, apart from autism. In 2013, the DSM-5 (5th ed.; *DSM-5*; American Psychiatric Association, 2013) was published, and ASD was redefined to cover autism, Asperger syndrome, HFA (high-functioning autism), and PDD-NOS (pervasive developmental disorder, not otherwise specified). For consistency I use ASD or mention a child as being on the spectrum, other than from a historical point of view. When Asperger first wrote of the disorder, autism is the term he used, so I keep it here for historical accuracy.

### **A History of ESL Education**

There are several landmark Supreme Court cases that have changed the education of English learners in this country. The first and perhaps most important is the historic *Civil Rights Act of 1964*, Pub.L. 88-352, 78 Stat. 241 (1964), the law that outlawed discrimination, and assigned students to public schools without regard to race, color, religion, sex or national origin. Free and equal public educational opportunities were to be provided at all levels in all states and territories of the United States.

1968 saw the passing of the *Bilingual Education Act (BEA)*, also known as Title VII of the Elementary and Secondary Education Act, Pub.L. 90-247 (1968). It was the first time that low-income students whose first language was not English were acknowledged at a federal level. It also paved the way for dual-immersion bilingual



schools, whose goals were for students to be fully bilingual, as opposed to competent in English but sacrificing or stigmatizing the native language.

A major precedent was set in 1974, *Lau v. Nichols* 414 U.S. 563 (1974), which ruled that non-English speaking Chinese students in the San Francisco Unified School District were not receiving adequate English language instruction, a direct violation of the Civil Rights Act. Merely providing these students with the same textbooks, teachers and curriculum as native English speakers excluded them from effective participation in the classroom.

*Castañeda v. Pickard* (1981) was a federal court case in Raymondville, TX, in which the plaintiff claimed that the school district was being discriminatory against his children because of their ethnicity. What arose from this is what is now called the Castañeda Test, in which three criteria must be in place for a school district to be in compliance with the Equal Education Opportunity Act. Programs need to a) be based on sound educational theory, b) receive adequate practices, resources and staff, and c) must be deemed effective through evaluation.

*Plyler v. Doe* (1982) was a landmark ruling establishing that undocumented children had the right to a free public education. This is significant because the court found that denying these children an education would prove to have persistent repercussions in the future, societally and otherwise.

*No Child Left Behind Act of 2001, PL 107-110* (2001) must be addressed in that Title III, Language Instruction for Limited English Proficient and Immigrant Students, ensured that English learners were allowed instruction towards English language

proficiency in order to achieve high levels in core academic subjects. This is also important as it mandates that states administer an annual English language proficiency test to determine growth in language development.

It was from this mandate that the WIDA (formerly World-Class Instructional Design and Assessment) Consortium was formed (WIDA, 2014). There are currently 35 states, including Minnesota, that are members of the WIDA Consortium, and as a result have integrated the WIDA English language development framework and assessments. WIDA focuses on academic English, the language needed to succeed in an educational setting. The assessments used are the WIDA Screener, and subsequent K-WAPT for Kindergartners, the ACCESS for ELLs 2.0- a summative test given to students from grades 1-12, the Kindergarten ACCESS, and the Alternate ACCESS, which is given to students with a cognitive disability significant enough to not meaningfully participate in the ACCESS 2.0. Students in a WIDA consortium state who qualify for EL services are tested annually, and assigned a set of scores from 1 to 6, based on four domains: speaking, listening, reading and writing. A level 1, or “entering” student, is a newcomer, whose English is comprised mostly of memorized language, or single words which are of the most common in English (e.g. cat). A level 6, or “bridging” student is one whose linguistic complexity, vocabulary usage, and language control compare to a native English speaker (WIDA, 2014).

As of June 2017, state proficiency scores for ACCESS have been updated. To be considered English proficient in the state of Minnesota, students now need at least a 4.5

overall composite score, and 3 out of 4 domains (listening, speaking, reading and writing) must score at least 3.5.

In the past 20 years or so, several states have passed laws to make English the legal language for public education. In 1998, California passed Proposition 227, also called the *English Language in Public Schools Statute* (1998). It required, among other things, that “all children in California public schools be taught English by being taught *in* English,” which effectively did away with all bilingual schools. It also limited the time in which English learners could remain in ELD classes, to a maximum of one year, before they were required to move into a regular classroom. In the year 2009, 30% of all English learners lived in states that have English Only educational policies (Planty, Hussar, Snyder, Kena, KewalRamani, Kemp, & Dinkes, 2009). Proposition 227 was repealed in 2014, effective July of 2017. Senate Bill No. 1174, chapter 753 (2014) stated that:

California would amend and repeal various provisions of Proposition 227. The bill would, among other things, delete the sheltered English immersion requirement and waiver provisions, and would instead provide that school districts and county offices of education shall, at a minimum, provide English learners with a structured English immersion program, as specified. The bill would authorize parents or legal guardians of pupils enrolled in the school to choose a language acquisition program that best suits their child, as provided.

It will prove interesting in years that come to see how the shape of education in California changes. I mention California’s Prop. 227 and the other states such as Arizona

and Massachusetts that have English Only educational policies, not because of a perceived disservice to millions of students, but without the much-needed language supports to effectively learn English, it begs to ask, when a child struggles at school, if indeed it is a language difference and not a learning disability, how is this even recognized or addressed in an English Only state?

### **English Language Proficiency**

Cummins (1982) used an iceberg analogy to discuss becoming proficient in a second language. That which is seen above the surface is BICS, or basic interpersonal communication skills. This is the colloquial language, comprised of high frequency words or memorized chunks (such as “can I go to the bathroom?”), or cognitively undemanding language used in social settings. It is said to take one to three years to become proficient in BICS English (Collier & Thomas, 2004).

CALP, or cognitive academic language proficiency, is the language required for a student to be successful at school. It is believed to take 5-10 years to become fully proficient in CALP English. Thomas and Collier (1997) conducted a longitudinal study, looking at the second language acquisition of 700,000 English learners, and found that the most significant variable in determining how long it takes to learn a second language depends on the amount of formal schooling in one’s first language. If students have had 2-3 years of schooling in their native language it took 5-7 years to be able to test at grade level in English. For those with little or no schooling in their native language, it took an average of 7-10 years to be able to test at grade level in English.

It is an important distinction to make between social and academic language, especially when teachers ask why certain students struggle when they “speak English so well.” When teachers hear a student chatting with peers on the playground, it bears a very different cognitive load than the language of textbooks or content areas that are required for educational success. Social language, if we consider the iceberg model, is important in that it is what academic language is built upon. They both require vocabulary and correct grammar usage in order to be understood. It is not within the scope of this paper to focus on the process of second language acquisition; suffice it to say that language learning, whether first or additional languages, is a complicated process.

### **The History of Special Education**

Societal, cultural, and historical beliefs have long influenced how individuals with disabilities are treated. Though this bears relevance on the fact that English learners come from diverse backgrounds where cultural beliefs surrounding disability may differ greatly, I will only address this from an educational standpoint. Special education was established with 1954’s *Brown v. Topeka Board of Education*, the epic civil rights trial that stated that “separate but equal” is inherently not equal. According to Rotatori, Obiakor and Bakken (2011), *Brown v. BOE* became the foundation for several legal actions surrounding children with disabilities, ensuring the right to free and appropriate public education (FAPE).

There were several legal actions at the state level, leading up to the 1975 Education for All Handicapped Children Act or Public Law (PL) 94-142 (1975) and its

addenda, later renamed the Individuals with Disabilities Education Act, or IDEA, (PL) 101-476 (1990). IDEA ensures that all children with disabilities are entitled to free and appropriate education to meet their unique needs and prepare them for further education, employment, and independent living. Furthermore, the education and services for which a child qualifies must be in the least restrictive environment appropriate for that child, preventing seclusion or isolation due to a disability or disabilities.

Also coming originally from PL 94-142 but further shaped by IDEA, is the requirement for all special education students to have an Individualized Education Plan (IEP), a service plan that is created as a team effort with all stakeholders: the parent(s) and an interpreter if needed, school social worker, special and general education teachers, and any of the following who provide service to the student: ESL teacher, Speech Language Pathologist, Physical/Occupational Therapist, school nurse, DAPE (Developmental Adapted Physical Education) teacher, etc. The IEP is revised annually to reflect service and goals for the upcoming year, and ensures that the student is placed in the proper learning environment where he or she can be successful.

Since the 1975 passing of PL 94-142, all individuals with disabilities in the United States are eligible for a free and appropriate education without discrimination. In summary, much has changed through history, in how American society views and treats persons with disabilities and how they are educated.

### **English Language Learners in Special Education**

While the focus of this paper is not on the incidence of an overrepresentation of English learners in special education settings, it is a real factor that must minimally be

addressed. When a student struggles, is it a language difference or learning disability (Cummins, 1991)? Sometimes it is both. Hopefully gone are the days where teachers place English learners into special education simply because they lag behind grade-level peers. But the reality is, that there is a disproportionate representation of students from culturally and linguistically diverse backgrounds in special education. Samson and Lesaux (2009) found that there was an underrepresentation of English learners in the primary grades, but that from third grade on, there was an overrepresentation. Several factors may lead to this happening: Primary teachers might be reluctant to refer an EL for special education assessment, attributing any struggle to language difference and not learning disability. Another phenomenon that could affect these findings is that as a student progresses through the grades, the curriculum gets more difficult and any language supports for an EL may be gradually removed, if they are in a state that doesn't have English Only legislation.

It is not in the scope of this paper to delve into the need for better or different identification models. Since passing of the various laws mentioned above, there have been changes in special education assessment models over time, which now better serve English learners. A discrepancy model was mandatory practice with the passage of PL 94-142 in 1975, and provided a way for students to be identified for special education services. This was viewed as a wait-and-see design, where students qualified for special education once they were two years behind in either reading or math. With the reissuing of IDEA in 2004, alternatives to the discrepancy model were introduced. Through Response to Intervention (RtI), or Multi-tiered System of Support (MTSS), both known

as prevention models, interventions were being completed and documented before a child had reached that marker of two years behind.

### **Minnesota Categories of Disability**

Minnesota has thirteen categorical areas of disability, only a few are addressed in this paper, but my culminating project, the website, is more comprehensive. The following labels and descriptions come from the Minnesota Department of Education (MDE, 2017). Severe Multiply Impaired (SMI) children meet the criteria for at least two of the categorical disabilities. Many English learners fall into this category. Depending on the specific disabilities, second language learning may or may not be affected. For example, a child with hydrocephalus and a specific learning disability in math computation, but who is reading and speaking at grade level would have SMI as an educational diagnosis on the IEP, but might not have any language goals attached to it.

Autism Spectrum Disorders (ASD) are neurodevelopmental disorders that affect how an individual processes information and interprets the world. Core features of ASD are persistent deficits in social interaction and communication, and restricted, repetitive or stereotyped patterns of behavior, interests or activities. Each individual with ASD displays a unique combination of characteristics, ranging from mild to severe. ASD affects how a child learns both first and any subsequent languages.

Developmental Cognitive Disabilities (DCD) is defined as conditions that result in intellectual functioning significantly below average and is associated with concurrent deficits in adaptive behavior. Adaptive behavior would be interpersonal skills, communication skills, and academic skills, or any skills required for daily living.



The state of Minnesota changed the name of the disability from “mentally impaired” to DCD in 2000 (MDE, 2004) while IDEA, the DSM-4 and AAMR (American Association on Mental Retardation) were still using the term “mentally retarded.” One area of deficit in adaptive behavior that will come into play in a child with DCD, is in language learning. If he or she lacks interpersonal skills, specific instruction would become necessary; how to talk to peers, ask for assistance, or even take turns on the playground would all require basic communication strategies.

Somewhat related, Developmental Delay (DD) occurs in a child up to age seven who is experiencing a measurable delay in development. There is some crossover between DCD and DD. A child with Cerebral Palsy has a physically developmental delay, but could also have an above average intelligence.

Other Health Disabilities (OHD) as a category includes a wide range of chronic or acute health conditions, including Attention Deficit/Hyperactivity Disorder (ADHD) that can range from mild to severe. Specific Learning Disabilities (SLD) are disorders in one or more of the basic psychological processes involved in understanding or in using spoken and written language. The disability may be exhibited as an imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations. SLD also includes conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia and developmental aphasia. Speech or Language Impairments (SLI) include disorders of fluency, voice, articulation or language.

All of the aforementioned categories of disability are educational diagnoses used by the state of Minnesota. Medical diagnoses may indeed differ. For example, on the

IEP of a child with Down syndrome, it will say DCD as an educational diagnosis, and the only place where it might mention the medical diagnosis of Down syndrome, is under nursing services, due to the physical sequelae associated with the disability.

These categories have all been mentioned because language acquisition in both L1 and L2 (or second language) can be affected by a categorical disability, and an ESL teacher must be aware of what a student is capable of, to determine appropriate instruction.

### **Autism Spectrum Disorders**

According to the DSM-5 (5th ed.; *DSM-5*; American Psychiatric Association, 2013), “autism spectrum disorders [are a] complex developmental disorder that can cause problems with thinking, feeling, language and the ability to relate to others. It is a neurological disorder, which means it affects the functioning of the brain. The effects of autism and the severity of symptoms are different in each person.” Bogdashina (2004) states that much of the research on the language development and deficits of autism have focused on pragmatics, or language used in a social context, in that verbal and nonverbal communication are both affected. The pragmatics of pre-language communication are frequently characteristic in a baby with ASD. Typically developing babies go through a stage where they mimic the sounds of an adult, and enter a back-and-forth sort of communication. This can be seen first through cooing, and later through babbling. The different cries in a baby will also indicate the source of discomfort or pain. In a baby with ASD, these developmental stages are frequently missed.

There are several language phenomena that have been documented since the earliest descriptions of autism (Asperger, 1944; Kanner, 1968), some of which are worth mentioning, for an ESL teacher might well come across a student displaying one or all of these. Four that are mentioned are echolalia, extreme literal thinking, prosody issues, and pronoun reversal.

Echolalia is either defined as immediate or delayed imitation of chunks of speech, frequently not analyzed at the word level. An example is a student of mine who says, “Tags”, when he is distressed. Clothing tags cause distress for him when they scratch against his skin, as he has sensory issues. According to Roberts (2014), for persons with ASD, echolalia is in part, a language acquisition strategy. They might repeat the chunk verbatim at first, repeatedly, and then over time the probability of the chunk modifying in structure increases. So the amount and type of echolalia may be a marker to indicate progression within language development.

There are several theories about the communicative functions of echolalia. It should be mentioned that analyzing an echolalic utterance in isolation of context could be misleading in that it is not necessarily seen as an interactional element of turn taking in conversation. Prizant and Duchan (1981) describe as many as seven functions of immediate echolalia, and Prizant and Rydell (1984) identify fourteen functions of a delayed echolalia. Echolalia can be a way to start a conversation, to process information, to increase comprehension, to respond to a question for which one might not know the proper response, or even as a way to deal with a stressful situation, to name a few.

Another language feature of ASD is extreme literal thinking. A person with ASD frequently does not understand figurative language such as sarcasm, metaphors, irony, proverbs and quite often humor in general (Wing, 1996). The phrase “he’s pulling your leg,” as another way of saying, “he’s kidding,” would mean something very different to a child on the spectrum, until they’ve committed this to memory as a chunk, in a process much like learning a new word in another language.

Happé (1999) speculates that because children with ASD also have difficulties with homographs, or words spelled the same way, such as bass meaning either a deep tone or a fish, and homophones, words that sound the same (sees, seas or seize) unless they are able to see the word in print, she suggests that one verbal word or phrase is stored in memory as one internal image. Even high-functioning autistics (HFAs) with above-average intelligence struggle with proverbs (Chahboun, Vulchanov, Saldaña, Eshuis, & Vulchanova, 2016). The difficulty lies not only in finding a commonality between two unrelated concepts, but then having to interpret the meaning of the relationship in order to understand a proverb.

The complication in understanding sarcasm for persons with ASD is likely related to poor control in prosody, in both reception and production. Prosody is the stress, intonation and rhythm of language. Furthermore, because each language has very different prosodic features, the rhythm of a second language in an English learner with ASD might never appear. With respect to lexical stress, Peppé and McCann (2003) wrote of decreased accuracy on a range of prosodic functions for persons with ASD, for example, forming a question or comment, emphasizing, or indicating an emotional state.

Grossman, Bemis, Plesa Skwerer, and Tager-Flusberg (2010) found that persons with ASD tended to produce an exaggerated pause in a multisyllabic word, especially when the stress is on the second syllable. They also noted that the length of utterance on the stressed syllable was notably longer than typically developing peers.

Another interesting linguistic characteristic frequently seen in children with ASD is personal pronoun reversal or avoidance. Personal pronoun reversal occurs in the first and second person, and according to the DSM-5 (2013) is one of the speech hallmarks of a child with ASD. When I point to myself and say, “I am Stacy,” a child on the spectrum might see the referent that is being pointed at (me) and attach the word “I” to it, and will in turn point to me and say, “I am Stacy”. In his seminal article, Kanner (1943) saw this as echolalic in nature, but more recent research has disagreed with this. Dale and Crain-Thoreson (1993) found a negative correlation between echolalia and personal pronoun reversal. While echolalia may account for some instances, according to Lee, Hobson and Chiat (1994) one of the things that make pronouns so complex is their deictic nature. Merriam-Webster dictionary (2017) defines deixis as, “the pointing or specifying function of some words (such as definite articles and demonstrative pronouns) whose denotation changes from one discourse to another.” The pronoun varies by whom is speaking. Where one says, “it is my dog,” (or with two people, “it is our dog”), another would say, “It is your dog,” but in speaking to a third person, “It is his dog” or “her dog,” depending on the gender of the owner. A person with ASD might say, “it is Stacy’s dog,” whether addressing the owner or someone else. Lee et al. found that when asking a child with ASD, “what am I wearing?,” there were few errors noted, showing that there is

pronoun comprehension. It is in the production of pronouns where errors are usually seen.

There are several theories on why personal pronoun reversal occurs so frequently in persons with ASD, ranging from various cognitive theories looking at discourse roles and deictic shifting, to theory of mind perspectives and impairment in the autistic sense of self. It is not the goal of this paper to parse out different schools of thought on the functionality of personal pronoun reversal, but to note it is a common occurrence in people with ASD, one that teachers of English learners may notice, and should be aware that it could be a result of the disability rather than an error in language learning.

On a different note, a study worth mentioning here is one that was prompted by the Somali community in Minneapolis and conducted by the University of Minnesota (Hewitt et al., 2016). In 2008, the community expressed concern with the number of Somali students being diagnosed with ASD. What came out of this was the formation of Minneapolis Somali Autism Spectrum Disorders Prevalence Project (MSASDPP). I bring this up because many if not most of these identified Somali students also qualified for EL services. Subsequently, many national organizations came forward to fund the research. The results showed that the overall ratio of Somali children with ASD (1:32) was similar to the overall ratio of Caucasian children (1:36), but of interest was that the Somali children with ASD were significantly more likely to be identified as having an intellectual disability (described as having an IQ below 70) than the overall population. For the students who had IQ scores, 100% of the Somali population as compared to 33% of the overall population had a co-occurring intellectual disability with ASD. It must be

approached with caution, as there are several factors at play here. Without delving into possible cultural bias in intelligence tests, another factor is that many of the Somali children were born outside of the U.S. and as such, were not diagnosed until a later age, therefore lacking an opportunity for early intervention. Another factor could be cultural perceptions on disability, and that parents are less concerned about diagnosing a disability in a child with average or above average intelligence. Factoring in the Somalis with average or above average intelligence and perhaps using different screening methods, it is clear that more studies are needed. The number of subjects in this study was small; there were only 184 students with cognitive data. Similar research has been conducted in Sweden (Barnevik-Olsson et al, 2008) and Britain (Hassan, 2012)- both places with significant Somali populations, and both showed a higher prevalence of ASD in Somali children. It is decidedly an opportunity for more research.

### **Down Syndrome**

Down syndrome (DS), also known as Trisomy 21, is a type of mental retardation caused by a third and extra copy of genetic material at chromosome 21. This can be due to a process called nondisjunction, in which genetic materials fail to separate during a crucial part of the formation of gametes, resulting in an extra chromosome. The cause of nondisjunction is not known, although it correlates with maternal age at the time of conception (World Health Organization, 2017). WHO (2017) reports the worldwide occurrence of Down Syndrome at 1:1,000 live births.

With respect to language, speech comprehension and production in a person with Down Syndrome, can differ greatly. Rondal (1993) stated that individuals with DS tend

to utter simple sentences, frequently omitting pronouns, prepositions and articles. Their lexical comprehension tends to be similar to their mental age, but production lags far behind comprehension. There is also a strong preference for gestural communication (Chapman, 1995). All of the above could be attributed to neuromuscular impairments in persons with DS that affect the rapid movement of the lips, tongue and jaw, all needed for speech. The mean length of utterance (MLU) in a person with DS can range from single words to more sophisticated language, depending on mental age (Fabbretti, Pizzuto, Vicari, & Volterra, 1997). This may be due not only to speech motor issues but to short-term memory issues noted in individuals with DS (Bunn, Roy, & Elliott, 2007).

Articulation issues, which have been well documented (Kent & Vorperian, 2013), state that macroglossia, or an enlarged tongue, was believed to be the cause for articulation issues in subjects with DS. However Guimaraes, Donnelly, Shott, Amin, and Kalra (2008) concluded that it is not true macroglossia, but rather the overall mouth size in an individual with DS is smaller. The mere fact that there is little correlation between comprehension and production suggests that articulation issues are rooted in physical anatomy or motor control.

In remarking on disorders of fluency, it is rather interesting that stuttering occurs in 10-45% of all individuals with DS, as opposed to only a 1% occurrence in the general population (Guitar, 1998). Cluttering, also a fluency disorder, is even more common. Cluttering is characterized by rapid or irregular speech patterns, and sounds jerky or has pauses that can be too short, too long, or improperly placed. In a study following 76 subjects with Down syndrome, Van Borsel and Vandermuelen (2008) discovered that



78.9% of the subjects showed an occurrence of cluttering. Worthy of note is that 17.1% of the subjects both stuttered and cluttered.

All of the above issues can and frequently do affect the intelligibility of a person with Down syndrome. Intelligibility is a known issue, as reported by parents and educators alike. Kumin (1994) surveyed 937 parents of children with DS, and 80% of the children had difficulty with articulation, and 58% of the parents reported frequent difficulties understanding. All of these speech production factors are significant, as one would encounter these in an English learner with DS as well, and could very likely influence language instruction.

There are a small number of articles about bilingual persons with DS. Vallar and Papagno (1993) published a case study of a 23-year-old woman with DS who was successfully trilingual in English, Italian, and French. Burgoyne, Duff, Nielsen, and Snowling (2016) conducted a case study with a bilingual girl with DS, and found there were no significant differences in the language ability of the girl as compared to monolingual individuals with DS in either Russian (L1), or English. Kay-Raining Bird, Trudeau, Thordardottir, Sutton, and Thorpe (2005) came to the same conclusion, that bilingualism was neither a detriment nor an advantage to a person with DS. The language abilities of the individuals in the research scored on a par with monolinguals with Down syndrome, with respect to MLU and morphosyntactic errors. They also noticed a correlation between mental age and MLU in bilingual individuals with DS. The higher the mental age is (the age at which they perform, with respect to intelligence), the longer the utterances in both first and second languages.

These are only four of the language characteristics of individuals with DS; they tend to follow a consistent profile and can be seen in both the first and second languages. For an ESL teacher working with a child with DS, it is important to factor this in when looking at language production, or speaking capacity. It is also prudent to remember that in a child with DS, comprehension, or listening capacity, is going to be much higher than production, unless the child is a newcomer to English.

### **Speech or Language Impairments**

ASHA, or the American Speech-Language-Hearing Association describes nine clinical areas of speech: articulation, voice, language, hearing, swallowing, cognitive aspects, social aspects, and communicative modalities (2016). Literature suggests that if an English learner has a language disorder, it will occur in both L1 and L2 (Kohnert, 2008). Not only Speech-Language Pathologists, but also ESL teachers have to consider several factors, like the role of native language, and accents or dialects.

There are two concepts in second language acquisition that should be mentioned: transfer and interference. Transfer is a positive influence that L1 has on L2. An example is SVO (subject, verb, object) as the order that words appear in a sentence. SVO languages account for approximately 75% of the world languages (Crystal, 1997). If L1 is an SVO language, then learning sentence structure in English, which is also an SVO language, would likely transfer.

Interference occurs when a structure that exists in L2 that doesn't exist in L1. An example is Japanese, where two consonants don't collocate without a vowel in between. So the word "strike" as spoken by a native Japanese speaker might sound more like,

“sutoráiku.” This is always something to keep in mind when working with ELs. This is an example of phonology in L1 interfering with L2 learning. Phonology is, according to Merriam-Webster (2017), the science of speech sounds. Languages differ with respect to whether a consonant is voiced and voiceless. For example, a Somali or Arabic speaker may say a voiceless bilabial stop /p/ as a voiced /b/, referring back to a sound that exists in L1, saying “babber” instead of “paper.” Additionally, vowel production varies greatly from one language to the next. Spanish, for example, doesn’t have a short I sound as English does, so the word “pitch,” might sound like “peach.”

The purpose of this last section was to bring attention the fact that there are DE students who qualify for special education services merely for articulation issues. It is the role of the Speech-Language pathologist to determine if a child has an articulation issue such as fronting, a phenomenon where a speaker utters sounds that should be made in the back of the mouth, in front, for example /t/ for /k/, or /d/ for /g/, so “Mexico” becomes “Metsitoe.” The Speech-Language pathologist and ESL teacher must be aware of sounds that simply don’t exist in L1, and whether there is a true communication disorder and not just native language interference.

### **Need for Research**

Much of the research on students who qualify for special education involves native language development. Simultaneously, much of the research on English learners and how they learn language is based on typically developing individuals. But what of the students whose families have moved, or the language at home is not the same as the language of the educational setting? There is clearly a need for more information on

English learners who also qualify for special education. This is pertinent information for ESL teachers who work with dual eligible students, in order to make sound educational decisions, and for determining appropriate language goals on an IEP. This once again reinforces the rationale behind my research question, *how can communication between ESL teachers and special education staff be improved to better serve dual eligible students?*

### **Summary**

This chapter began with some relevant terminology necessary for understanding the chapter, with a justification for why certain terms were chosen over others. It then provided an overview of federal laws that historically have changed how ELs and students with disabilities are educated in this country, also providing a context into the state of American schools today.

The chapter then addressed language proficiency, as a framework for what a typically developing child experiences as they learn English as a second language. It then moved into how a child who is *not* typically developing learns language, and specific issues or prominent features documented in different disabilities.

Chapter Three: Project Description explains the process of the culminating project. Findings from this chapter were used to design a website, the ultimate goal to improve communication between ESL and Special Education departments in order to better serve dual eligible students. Chapter Three provides a rationale and context in which the project took place.

## CHAPTER THREE

### PROJECT DESCRIPTION

#### Introduction

Chapter Two: Review of the Literature presented information regarding the general state of English as a second language (ESL) and special education historically, and factors that may affect language learning for a child who is eligible for both. Chapter Three paints a better picture of my culminating project and for the rationale behind it. The information presented in this chapter gives the procedure by which I completed the culminating project in order to answer my research question: *How can communication between ESL teachers and special education staff be improved to better serve dual eligible students?*

Federal and state laws mandate that all students who qualify for services in both English as a second language and special education, students called Dual Eligible (DE) in the state of Minnesota, receive services for both. Furthermore, the ESL teacher is part of the Individualized Education Plan (IEP) team, where annual goals are set, and as such, might have specific language goals to add to the IEP. Ideally, the ESL teacher meets with the special education team to determine the logistics of service to best meet the needs of each individual student. But the unfortunate reality is that frequently the only

chance the ESL teacher has to be able to discuss individual needs and language goals is at the student's annual IEP meeting.

When a student qualifies for special education, it is often the case that he or she also has a disability that affects language. If a disability is severe enough to cause significant delays or show disorders in language acquisition, both first language and any subsequent languages will be affected. Indeed a child might even be nonverbal, but comprehension must still be considered as part of language acquisition. In the state of Minnesota, many children who are DE arrived as refugees, and second language (L2) acquisition- both comprehension and production, albeit tenuous at times, is also necessary, as English is likely the language of instruction.

### **Overview of the Chapter**

In the past years I have been involved with several initiatives surrounding dual eligible students at my school. I piloted a new Dual Eligible Service Plan paperwork for the district, and I began collaborating with one of the school's Speech Language Pathologists in order to streamline and meld language services. In response to these initiatives, I looked how I could advance communication and collaboration between the Multilingual and Special Education departments, specifically within my district, but possibly at other schools in the state and around the country.

I discuss the rationale behind deciding upon a website for my culminating project, with a description of the project. I then talk about the the framework by which I designed my website and the plan which was in place for implementation and determination of its effectiveness.

### **Project Rationale**

The rationale for choosing to create a website for my culminating project was that, I knew I wanted to focus on DE students, as they comprise approximately 36% of my caseload. I also knew that I wanted my intended target audience to be ESL teachers. There is a dearth of information for ESL teachers regarding students who are learning English yet have a disability or disabilities that may affect language learning.

The service I provide to the DE students on my caseload is truly student-driven; each individual has unique abilities and needs, and as such language goals must also be unique. In order to determine these goals, I must first be familiar with my students. That frequently involves reading the most recent IEP, paying close attention to language goals. If a particular student has a medical diagnosis of Prader–Willi syndrome, this will only be in the IEP as an educational diagnosis of Developmental Cognitive Disabilities, or DCD. I exercise due diligence by researching the disability, and any subsequent language characteristics that might affect my instruction. I have long felt that a single repository to where ESL teachers could turn, would be beneficial. After conversations with numerous people at the district level this past year, I realized that there is a true need for better communication and collaboration between the ESL and Special Education departments, and a website seemed to me the ideal solution. I envisioned a website that is a living document, meaning it will always be in the process of being updated, adjusted, and added to, where not only I will be a contributor, but others, experts in the field, will also have an opportunity to contribute or comment. I hoped to have links to videos and different

organizations, suggestions for instructional methods, and even specific apps that could be downloaded to assist in language instruction for DE students.

### **Project Description**

In these paragraphs I describe the process through which I went to complete my culminating project. My first step was to set clear and concise goals for the website, to ensure it met expectations and provided useful content. The website needed to have information useful for the intended audience. For this reason, I had my ESL District Program Facilitator (DPF) conduct a two-question survey to ESL teachers in the district, collecting information first on how many dual eligible students were on their caseloads. The second question was what in areas of medical or educational diagnoses would they like to see on a website for ESL teachers regarding the L2 acquisition of DE students. All through this process, I was reading scholarly journals and looking at professional organizations for information regarding first and subsequent language acquisition in various disabilities.

Next I storyboarded my website, creating what we call in education a mind map, looking at what information I wanted to include, and then met with a web designer to discuss which website builder would best meet my needs with respect to creating a site that enabled readers to comment. As noted before, my wish was that this website is a living document.

Cost was a factor; I spent money on a domain name, but wanted to find an adequate free website builder that wouldn't be too complicated for a novice to use. I decided upon WordPress.com as it allowed me to use my domain name,



dual-eligible-students.com, and the set-up process seemed fairly self-explanatory. The designer assisted me with a color theme, typography, and layout for ease of navigation. She also helped me to decide upon a photograph for the cover page. If time and money had permitted, I would have had her do all of the design work for me, but in the end, I decided that since I was seeking my master's in ESL and not web design, my priorities lie elsewhere.

I started plugging information from my first two chapters into the website, without too much worry about editing the content at first; I wanted to get the skeleton of the website in place before I added citations. Keeping my target audience in mind, ESL teachers working with dual eligible students, I sought out lesson plans and websites to link with respect to certain disabilities and the language domain involved (such as reading for students with Down Syndrome).

I conferred with several DCD (Developmental Cognitive Disabilities) teachers to see if there were any glaring omissions in the website. As I have stated, my first degree was in Child Development specializing in delayed and disordered language acquisition, that is, how children learn language, the stages that a typically developing child goes through, and what can go wrong in the process, but it was many years ago and I knew that there have been many developments and changes in diagnoses and educational approaches since then.

Another person with whom I conferred was one of the Speech Language Pathologists at our school. He and I serve many of the same students, and have

collaborated in the past in trying to streamline services. He was able to assist me with speech and language impairments (SLI) sections on my website.

In this project paper, I only discussed a small number of disabilities with respect to language issues an ESL teacher may come across (see Chapter Two: Review of the Literature), three that are prevalent at my school: Autism Spectrum Disorder (ASD), Down syndrome, and speech and language impairments. The website is more comprehensive.

Once the website was developed, the next step was determine the best way to notify ESL teachers in the district that the site is up and running, and that their comments are valued. My goal was to discuss how to promote the website with my district's ESL program facilitator; her input has proven to be invaluable.

### **Design Framework**

One of the design frameworks used for this project was the U.S. Department of Health & Human Services' Research-Based Web Design and Usability Guidelines (U.S. Dept. of Health & Human Services, 2006). In this book, research-based web design was developed to "assist those involved in the creation of Web sites to base their decisions on the most current and best available evidence" (p.XV). "Guidelines" describes best practices with respect to designing a website for ease of navigation and optimizing the user experience.

Also used was an online course required by my school district, Web Accessibility Essentials, which taught about equitable access and removing barriers that prevent interaction with or access to websites by people with disabilities. Accessible websites

have multiple sensory channels and allow for multiple navigational tools (Usability.gov, 2017).

A third document used in the creation of the culminating website was from Dalhousie University in Nova Scotia, “6 Criteria for Websites” (2017). These are six criteria to deal with content as opposed to graphics or design of a website: authority, purpose, coverage, currency, objectivity, and accuracy. Authority reveals that the person, agency or institution who created a website has the qualifications, credentials, and knowledge to do so. Purpose deals with intent. Is the website designed to inform, persuade, entertain, or provide an opinion? Coverage deals with how in depth does the website go. Is it comprehensive, or does it merely cover selective bits of information? Currency relates to how current the information presented in the website is. Are the links, information and data up to date; are the theories presented still in favor? Objectivity ensures that the website is unbiased, and presents information that does not have an agenda. And finally, accuracy relates to whether an author has an organizational affiliation that perhaps is trying to push forth a particular agenda, or, is the information accurate with verifiable references?

The three sources mentioned above all assisted me in providing a framework for a website that will hopefully contribute to public scholarship, and increase knowledge and communication between the ESL and Special Education departments. The ultimate goal and outcome of this website relates to improving services to students who are eligible for, and as such, should be receiving services from both.

## Summary

Chapter Three: Project Description described how I was to answer my research question, *How can communication between ESL teachers and special education staff be improved to better serve dual eligible students?* I stated how I arrived at this topic, and how important a collaborative effort will be, in that there is generally little communication between ESL and Special Education departments; indeed the dearth of journal articles surrounding Dual Eligible students shows a need for more collaboration. We as educators must address the whole child, if our craft is truly student-driven. And if a student qualifies for both English learner and special education services, legally, one cannot happen at the expense of the other. Collaboration between the two departments must happen in order to address all language needs of the student.

Next I provided a rationale for why I chose designing a website for my culminating project, and who my intended target audience was. I gave a description of the project and the process through which I went to complete it.

Chapter Four: Conclusion will highlight what I learned through the capstone process. It will also touch upon a review of the literature, and look at implications or limitations of my project, and ideas for further projects or research. I reflect upon my process of developing a website, and discuss what direction to go after its creation.

## CHAPTER FOUR

### REFLECTION

#### **Research Question**

The question that guided my research was: *How can communication between ESL teachers and special education staff be improved to better serve dual eligible students?*

#### **Introduction**

My capstone project encompassed many emotions in its process. It was challenging because I had never designed a website before, and at times felt I was in way over my head. It was exhilarating, in that I had so many people in my district- teachers and program facilitators alike, tell me how important my project would be in enabling ESL teachers to better understand the dual eligible students they serve. It was also frustrating as I found myself in the research process, realizing how big the subject matter could become. I felt that the website could become a never-ending project, how I could spend years past receiving my degree adding to it. With its conclusion, I feel very proud of the work I've done, and sincerely hope it contributes to my field.

The school where I work has 77 students who qualify for special education services. Of the 77, nearly 1/3 also qualify for English learner services. In an attempt to best meet the unique and individual needs of the dual eligible students I serve, I have discovered that there is an unmistakable chasm between the Special Education and

Multilingual departments, not only in my district, but across the state and the nation as a whole. Few scholarly articles have been written about second language learning in students with disabilities, and individuals who work in either Special Education or ESL departments know their craft well, but seem to know little of the other discipline in a dual eligible (DE) student.

In Chapter One: Introduction, I provided a rationale for my culminating web design project, and a context by which I arrived at my research question. As stated above, in my years of teaching English learners, I have wondered about how to best serve DE students. While there seems to be clear direction in service delivery in each department, there lacks cohesion between the two departments.

In Chapter Two: Review of the Literature, I first laid out several historic laws that have come to shape how English learners and students with disabilities are educated in the United States. Perhaps the single most important law to change how English learners in the U.S. are educated was the Civil Rights Act (1964), which outlawed discrimination, and assigned students to public schools without regard to race, color, religion, sex or national origin. With respect to students who qualify for special education, the most influential law was likely the 1975 Education for All Handicapped Children Act or Public Law (PL) 94-142 (1975), later renamed the Individuals with Disabilities Education Act, or IDEA (1990), which ensured that all children with disabilities were entitled to free and appropriate public education (FAPE) to meet their individual needs, and that education and services must be in the least restrictive environment appropriate for that child, preventing seclusion or isolation due to a disability or disabilities.

I then examined issues surrounding English learners who qualify for special education, such as how they are over- and underrepresented as compared to other populations. It can be a difficult process, when a student is behind, parsing out whether it is because of language learning or a learning disability, and there is no set formula for determination that works 100% of the time.

I then considered the state of Minnesota's nine categories of disability as they are used for diagnoses for either educational or medical purposes on a student's IEP, or individualized education plan. I touched upon various language features that can be seen in disorders such as Autism Spectrum Disorders, Down syndrome, and speech or language impairments. This is indeed the crux of my culminating project. Language characteristics that are commonly seen in the first language of a child with a disability, can also appear in the second language. I wanted to create a website that described these language features as a way for ESL teachers firstly, to be made aware of their existence, but also to assist in language instruction.

There were several aspects of the literature review that proved important for my capstone. It goes without saying that the two major laws, the Civil Rights Act (1964) and IDEA (1975), changed the face of American schools as we see them today. Indeed, without the passage of these two federal laws, neither ESL nor special education as areas of specialty would exist as they do today. Inconceivable are what schools would look like without either; we would be a country with segregated schools and unequal access to quality education, not to mention institutions, asylums and hospitals filled with children with disabilities who would likely never have the opportunity to go to school.

Equally important to my capstone were specific articles relating to distinct language characteristics of the various categories of disability. For example, the two articles about echolalia in students with Autism Spectrum Disorders, the functions of immediate echolalia (Prizant & Duchan, 1981), and of delayed echolalia (Prizant & Rydell, 1984), proved very interesting for me. I have three students on my caseload who are on the spectrum, and all three produce immediate and / or delayed echolalic statements. It has helped me to understand the intricacies of communication, and what they are trying to say.

Another article that proved important not only for my project, but also for my instruction of dual eligible students was that by Fabbretti, Pizzuto, Vicari, & Volterra, (1997), which stated that mean length of utterance (MLU) in a child with Down syndrome tends to match mental age. Indeed I have four students on my caseload who have Down syndrome. Their speaking abilities range from nonverbal (or communicative grunts) to eight or more (mostly unintelligible) words in a string. Since researching the linguistic features of Down syndrome (Chapman, 1995), I have been able to better understand certain speech patterns that occur. The nonverbal student with DS on my caseload recently came from a refugee camp in Ethiopia, and my suspicion is that he will eventually be able to produce speech with an MLU of perhaps 1-3 words, but that the absence of productive language might have more to do with a lack of early intervention than his mental age. With each of these four, I began collaborating with one of the Speech-Language Pathologists in order to streamline services and come up with common language goals (such as increase in MLU with the assistance of a communication board).



One final article from the literature review that proved important not only for my capstone project, but also to my job on the whole, was the Minneapolis Somali Autism Spectrum Disorder Prevalence Project (Hewitt et al., 2016), which discussed the prevalence of ASD in the Minneapolis Somali community. This bears relevance because approximately 86% of the English learners at my school speak Somali as their first language. Indeed the prevalence of Autism Spectrum Disorders in the Somali population is a topic discussed frequently at my school.

In Chapter Three: Project Description, I provided the rationale that led me to create a website for my culminating project. I considered how to reach a large number of people, yet on their own time, as the duty day of a teacher is already full. I also described the development of the website, with a design framework and several guiding principles I utilized for sound website design and usability.

In this, Chapter Four: Reflection, I discuss what I have learned through the capstone process, reflections as a researcher, writer and learner, possible implications and limitations to my project, opportunities for future research projects for myself or others, and recommendations based on my findings. I consider how the results will or could be communicated to my intended audience, and how this culminating project will benefit my profession.

### **Project Development**

The process of developing the website began by securing a domain name. I chose dual-eligible-students.com as a site that wasn't necessarily affiliated with my school district or the university through which I was receiving my master's degree. I wanted it

to be searchable for anyone with interest in teaching dual eligible students, even though this terminology appears to be used only in the state of Minnesota.

I then created a diagram to visually organize my information- a mind map of sorts. I researched various free website builders, knowing that I wanted a site that provided an option for viewers to comment. I opted for WordPress.com after a web designer recommended it; it had many templates and seemed easy enough to maneuver, it was customizable and free. I found a photograph of a student I wanted to use as the static image on the website, and received written permission from his mother to use the photo.

Through trial and error, I figured out some rudimentary design actions such as how to create a drop-down menu. I cut and pasted from my literature review chapter first, before I went on to further research different disabilities, and find more articles, books and websites pertinent to my web design project. Through WordPress.com the site is updated automatically upon saving new material, so I didn't have to worry about including a launch of the website.

### **Reflections as a Researcher, Writer, and Learner**

Throughout the process I used Dalhousie University's "6 Criteria for Websites" (2017), to shape my content. As I reflect, I still struggle with the "Authority" criterion; do I truly have the qualifications and knowledge to even attempt such a project? While I have studied first language acquisition and some of the language disorders or delays that might co-occur with a disability, it has been over 20 years since I received my bachelor's degree. Much has changed in the diagnoses, theories around causality, and treatments. I am truly thankful for the ability to find and research current scholarly journals online; this

capability wasn't yet in existence in the early 90's when I last researched the subject.

As a researcher, I struggled with how much to include on the website. All of the language characteristics of each disability were weighty enough to be stand-alone theses, so researching and condensing to the point of being able to add pertinent information to the website regarding speaking, listening, reading and writing without presenting too much information, proved a steep learning curve for me as a researcher.

I received some assistance from my district program facilitator for English learners, who sent out a two question survey to ESL teachers in the district, wondering what they would like to see on a website about dual eligible students. Many of the responders requested information on students with ASD. Three areas I hadn't initially considered for my website, but with responder's comments decided to at some point, try to add to the website were: actual lesson plans, dyslexia and SLIFE students, or students with limited or interrupted formal education.

As stated before, there are few articles written that consider dual eligible students. Much of the information on the language of students with disabilities pertained to first language acquisition. In addition, articles concerning second language acquisition involved typically developing children. Researching the four language domains (speaking, listening, reading and writing) regarding certain disabilities, showed an abundance of articles, so as I read articles searching for information, I looked for that which might be pertinent to an ESL teacher. Keeping track of my keyword searches in the article databases proved to be a task in itself. Searching the keywords "developmental disabilities", for example, presents a different set of articles than

“learning disabilities” or “developmental delays”.

As a writer, I found it hard to alter my voice to the impersonal tone that frequently defines academic writing. This was indeed the first paper I had written in many years, and I was familiar with APA (American Psychological Association) style, but like many other things, even APA format has changed since the last time I needed to know it. One area I struggled with regarding writing was the surplus of acronyms used in both special education and in ESL. I had to continually remind myself that the audience for my paper was not the same audience as for the website. After writing, I went back and made sure that each chapter could stand alone, without needing the previous chapter or chapters for defining terminology.

As a learner, I’ve discovered a lot in the last six months- not just with creating a website, something I have never done before. Behind every disability I studied are the faces of students I serve. Taking a look at language features that are the sequelae of Autism Spectrum disorders, for example, has changed how I teach my dual eligible students who are on the spectrum. It has given me insight into aspects of second language learning that may be difficult or impossible for students with disabilities to comprehend. It also taught me about certain language features I see in these students that didn’t necessarily make sense beforehand, such as echolalia. In a way, my students made more sense to me.

### **Future Implications and Limitations**

There are a number of potential barriers I see arising after the completion of my project. One relates to dissemination of information. While I am proud of the work I’ve

done, and sincerely hope that the website proves useful to ESL instructors in my district, or even around the state; my fear is that it will not be utilized to its full potential.

Through the statistics tab on WordPress.com I am able to see how many visitors and views take place. Making teachers aware of the website's existence could prove to be difficult. I will share a link with program facilitators in the district level, and it would be not only advantageous, but perhaps also ideal if website ownership is taken on as a forum by the multilingual department, or at least program facilitators of dual eligible students. Then could it be the living document I hope it will become. I am by no means an expert in the area of dual eligible students, so to have others who are more knowledgeable than I contribute would be beneficial. This will aid in both topical currency and the extent of coverage. These are two of the six criteria for websites set forth by Dalhousie University. Currency is how often the website is updated, and whether the links are up-to-date. Coverage deals with how comprehensive the website is. I am a full-time teacher, and while I would enjoy the challenge of continually adding to the website, I know in reality that once the capstone project is completed, I won't necessarily put the same level of energy into it as in the past six months. I am able to maintain the website as long as time permits and the domain name is paid for.

Other possible implications are policy barriers. The website might not necessarily aid in answering my research question: How can I, as an ESL teacher, improve the level of communication and knowledge shared, between ESL teachers and Special Education departments, to better serve Dual Eligible students? Is true collaboration between the departments only capable of happening through teachers who

have licenses in both areas? As yet, I have no plans to receive an additional license in special education. I enjoy teaching all English learners, not just those who are dual eligible, even though they make approximately 36% of my caseload. This is likely a higher percentage than most in my position, but it is still only about one in every three whom I serve.

### **Further Research**

When reflecting on where to go from here, now that the website has been developed and the capstone project completed. I must begin by saying there is a clear dearth of information available about dual eligible students. I see it as an area where more research is essential. I have stated more than once, that this was the most difficult piece of this capstone project.

One piece to consider relates to communicating results. There is conversation about presenting the information in my website to special education and ESL teachers who work with dual eligible students in my school district. With the overall number of dual eligible students both at the district level and indeed across the nation, there is a clear need for increased interdepartmental communication. I was also approached by my district facilitator for English learners, wondering if there is any desire to collaborate with her, perhaps presenting at the annual TESOL (Teachers of English to Students of Other Languages) international convention. It would be an exciting direction for making my results known on a much wider platform.

As far as projects in my future, the subject of dual eligible students is an important one and holds great interest for me, yet there is a need for more research and

information. I would like to tackle perhaps one disability at a time and write about specific features encountered in the four language domains, for an audience who works with dual eligible students. I feel that dual eligible students are often neglected or ignored when it comes to teaching English learners. These are students who at best, might not go to college, and at worst, might never have life skills necessary to live independently, and as such are often forgotten or treated as second-class students.

For someone attempting to do a similar project, I would highly recommend working with a professional web designer, if it is financially possible. Upon reflection, I feel that my website could have a more professional look to it. This troubled my sometimes-perfectionistic ways. While content was of the utmost importance to me, I feel that graphics and design can only lend to an air of authority and professionalism.

### **Conclusion**

The goal of my capstone project was to design an interactive website to answer the research question: How can I, as an ESL teacher, improve the level of communication and knowledge shared, between ESL teachers and Special Education departments, to better serve Dual Eligible students? To answer this question I researched particular disabilities which then led to the creation of the website. My hope was for a product that is a living document, one that ESL teachers can add information, anecdotal notes, and questions or comments for others to respond to, regarding dual eligible students.

The research I conducted will contribute to my own career, and my attempt to always be a better teacher to those whom I serve. I truly believe that the work I do is student driven, and to do this successfully, it is necessary for me to know the individuals

on my caseload. With my dual eligible students, I feel it is my responsibility to know where they are at regarding speaking, listening, reading, and writing, and within the capacity of their disabilities, in order to meet them at their ability level and provide proper scaffolds and opportunities for success in their language learning process.

That said, I have discovered through this process that yes, I am an ESL teacher, and not a trained website developer. Other than the lack of research available regarding dual eligible students, the web design process of this project was perhaps the most difficult component for me. I knew that I wanted the website to be organized by the four aforementioned domains of English learning (speaking, listening, reading, and writing); I had a clear idea of what I wanted it to look like, but when it came down to the actual aesthetics of a user-friendly website, I had no idea what I was doing.

Considering actual web content aside from the design piece, I feel that I've contributed to the field commensurate to receiving a master's degree, and that my culminating project will indeed support the instruction of dual eligible students and foster communication between the ESL and Special Education departments. For the benefit of students that are served by both departments, best practice is to understand the interaction between their disability and the language learning process; in fact, it is crucial in meeting their unique learning needs.



## REFERENCES

- American Psychiatric Association. (1987). *Diagnostic and statistical manual of mental disorders* (3rd ed., revised). Washington, DC: Author.
- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: Author.
- American Speech-Hearing Association. (2016). *Standards and implementation procedures for the certificate of clinical competence in speech-language pathology*. Retrieved from <http://www.asha.org/uploadedFiles/SLP-Certification-Handbook.pdf>
- Asperger, H. (1944). Autistic psychopathology in childhood. In U. Frith (Ed.), *Autism & Asperger syndrome*. (pp. 33-92. Cambridge, UK: Cambridge University Press.
- Barnevik-Olsson, M., Gillberg, C., & Fernell, E. (2008). Prevalence of autism in children born to Somali parents living in Sweden: A brief report. *Developmental Medicine and Child Neurology*, 50(8), 598-601.
- Bilingual Education Act. Pub.L. 90–247, 81 Stat. 816 (1968). Retrieved from <https://www.gpo.gov/fdsys/pkg/STATUTE-81/pdf/STATUTE-81-Pg783.pdf>

- Bogdashina, O. (2004). *Communication issues in autism and Asperger syndrome: Do we speak the same language?* London: Jessica Kingsley Publishers.
- Brown v. Board of Education. 347 U.S. 483. (1954). Retrieved from <https://supreme.justia.com/cases/federal/us/347/483/case.html>
- Bunn, L., Roy, E. A., & Elliott, D. (2017). Speech perception and motor control in children with Down syndrome. *Child Neuropsychology*, 13(3). 262-275.
- Burgoyne, K., Duff, F. J., Nielsen, A. U., & Snowling, M. J. (2016). Bilingualism and biliteracy in Down syndrome: Insights from a case study. *Language Learning*, 66(4), 945-971.
- California Senate Bill No. 1174, chapter 753. Proposition 58. (2014). Retrieved from [https://leginfo.ca.gov/faces/billNavClient.xhtml?bill\\_id=201320140SB1174](https://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=201320140SB1174)
- Castañeda v. Pickard 648 F.2d 989 (1981). Retrieved from <https://web.stanford.edu/~hakuta/www/docs/castaneda.doc>
- Chahboun, S., Vulchanov, V., Saldaña, D., Eshuis, H., Vulchanova, M. (2016). Can you play with fire and not hurt yourself? A comparative study in figurative language comprehension with individuals with and without autism spectrum disorder. *PLoS ONE*, 11(12): e0168571. Doi:10.1371/journal.pone.0168571
- Chapman, R. S. (1995). Language development in children and adolescents with Down syndrome. In P. Fletcher & B. MacWhinney (Eds.), *The handbook of child language* (pp. 641-663). Oxford: Blackwell.

- Civil Rights Act of 1964 § 7, 42 U.S.C. § 2000e et seq. (1964). Retrieved from  
<https://www.gpo.gov/fdsys/pkg/STATUTE-78/pdf/STATUTE-78-Pg241.pdf>
- Collier, V. P., & Thomas, W. P. (2004). The astounding effectiveness of dual language education for all. *NABE Journal of Research and Practice*, 2(1), 1-20.
- Crystal, D. (1997). *The Cambridge encyclopedia of language*. Cambridge, UK: Cambridge University Press.
- Cummins, J. (1982). *Bilingualism and minority language children*. Toronto, ON: OISE Press.
- Cummins, J. (1991) Language development and academic learning. In Malave, L. and Duquette, G. (eds.) *Language, Culture and Cognition*. Clevedon, UK: Multilingual Matters.
- Dale, P. S., & Crain-Thoreson, C. (1993). Pronoun reversals: Who, when and why?. *Journal of Child Language*, 20 (3): 573-589.
- Dalhousie University. (2017). *6 criteria for websites*. Retrieved November 13, 2017, from  
[https://cdn.dal.ca/content/dam/dalhousie/pdf/library/CoreSkills/6\\_Criteria\\_for\\_Websites.pdf](https://cdn.dal.ca/content/dam/dalhousie/pdf/library/CoreSkills/6_Criteria_for_Websites.pdf)
- Deixis. (2017). *Merriam-Webster.com* Retrieved July 15, 2017, from  
<https://www.merriam-webster.com/dictionary/deixis>
- Education for All Handicapped Children Act. Pub.L. 94-142. (1975). Retrieved from  
<https://www.gpo.gov/fdsys/pkg/STATUTE-89/pdf/STATUTE-89-Pg773.pdf>

- English Language in Public Schools Initiative Statute, Proposition 227 (1998). Retrieved from <http://vigarchive.sos.ca.gov/1998/primary/propositions/227text.htm>
- Fabbretti, D., Pizzuto, E., Vicari, S., & Volterra, V. (1997). A story description task in children with Down's syndrome: Lexical and morphosyntactic abilities. *Journal of Intellectual Disability Research*, 41(2), 165-179.
- Grossman, R. B., Bemis, R. H., Plesa Skwerer, D. Tager-Flusberg, H. (2010, June). Lexical and affective prosody in children with high-functioning autism. *Journal of Speech, Language, and Hearing Research*, 53, 778-793.
- Guimaraes, C. V., Donnelly, L. F., Shott, S. R., Amin, R. S., & Kalra, M. (2008). Relative rather than absolute macroglossia in patients with Down syndrome: Implications for treatment of obstructive sleep apnea. *Pediatric Radiology*, 38(10), 1062-1067.
- Guitar, B. (1998). *Stuttering: An integrated approach to its nature and treatment*. Philadelphia, PA: Lippincott Williams & Wilkins.
- Happé, F. G. E. (1997). Central coherence and theory of mind in autism: Reading homographs in context. *British Journal of Developmental Psychology*, 15, 1-12.
- Hassan, M. (2012). Predicting the prevalence of autism among ethnic groups. *Archives in Disease in Childhood*, 97, 95-96.
- Hewitt, A., Hall-Lande, J., Hamre, K., Esler, A., Punyko, J., Reichle, J., & Gulaid, A. A. (2016). Autism spectrum disorder (ASD) prevalence in Somali and non-Somali children. *Journal of Autism & Developmental Disorders*, 46(8), 1-10.  
doi:10.1007/s10803-016-2793-6

IDEA Child Count, Identification of children with disabilities. Data display: Minnesota.

(2011). Retrieved from

<https://www2.ed.gov/fund/data/report/idea/partbspap/2013/mn-acc-stateprofile-11-12.pdf>

Individuals with Disabilities Education Act, or IDEA, Pub.L. 101-476. (1990). Retrieved

from <https://www.law.cornell.edu/uscode/text/20/chapter-33>

Kanner, L. (1943). Autistic disturbance of affective contact. *Nervous Children*, (2), 217-250.

Kanner, L. (1968). Autistic disturbances of affective contact. *Acta Paedopsychiatrica*, 35(4), 100-136.

Kay-Raining Bird, E., Trudeau, N., Thordardottir, E., Sutton, A., & Thorpe, A. (2005).

The language abilities of bilingual children with Down syndrome. *American Journal of Speech-Language Pathology*, 14, 187-199.

Kent, R. D., & Vorperian, H. K. (2013). Speech impairment in Down syndrome: A review. *Journal of Speech Language Hearing Research*, 56(1), 178-210.

Kohnert, K. (2008). *Language disorders in bilingual children and adults*. San Diego, CA: Plural.

Kumin, L. (1994). Intelligibility of speech in children with Down syndrome in natural settings: Parents' perspective. *Perceptual and Motor Skills*, (78), 307-313.

Lau v. Nichols. 414 U.S. 563 (1974). Retrieved from

<https://supreme.justia.com/cases/federal/us/414/563/case.html>

- Lee, A., Hobson, R. P., & Chiat, S. (1994). I, you, me, and autism: An experimental study. *Journal of Autism and Developmental Disorders*, 24(2), 155-178.
- Minnesota Department of Education. (2004). *Promising practices for the identification of individuals with developmental cognitive disabilities*. Roseville, MN: Author.
- Minnesota Department of Education. (2017a). *Categorical disabilities*. Retrieved from <http://education.state.mn.us/MDE/dse/sped/cat/>
- Minnesota Department of Education. (2017b). *English learner education in Minnesota: Fall 2016 report*. Roseville, MN: Author. Retrieved from <http://education.state.mn.us/MDE/dse/el/>
- No Child Left Behind Act of 2001 Pub.L. 107-110 (2001). Retrieved from <https://www.congress.gov/bill/107th-congress/house-bill/1/text?overview=closed>
- Peppé, S., & McCann, J. (2003). Assessing intonation and prosody in children with atypical language development: The PEPS-C test and the revised version. *Clinical Linguistics & Phonetics*, (17), 345-354.
- Phonology. (2017). *Merriam-Webster.com* Retrieved July 12, 2017, from <https://www.merriam-webster.com/dictionary/phonology>
- Planty, M., Hussar, W., Snyder, T., Kena, G., KewalRamani, A, Kemp, J., & Dinkes, R. (2009). *The condition of education 2009* (NCES 2009-081). Washington, DC: National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education.
- Plyler v. Doe, 457 U.S. 202 (1982). Retrieved from <https://supreme.justia.com/cases/federal/us/457/202/case.html>

- Prizant, B., & Duchan, J. (1981). The functions of immediate echolalia in autistic children. *Journal of Speech and Hearing Disorders*, (46), 241-249.
- Prizant, B. & Rydell, P. (1984). Analysis of functions of delayed echolalia in autistic children. *Journal of Speech and Hearing Research*, (2), 182-192.
- Roberts, J. M. A. (2014). Echolalia and language development in children with autism. In J. Arciuli and J. Brock (Eds.), *Communication in autism*. Amsterdam: John Benjamins Publishing Company.
- Rondal, J. A. (1993). Down's syndrome. In D. Bishop & K. Mogford (Eds.) *Language development in exceptional circumstances*. Hove, Belgium: LEA.
- Rotatori, A. F., Obiakor, F. E., & Bakken, J. P. (2011). *History of special education: Advances in special education, vol. 21*. Bingley, UK: Emerald Group Publishing.
- Samson, J. F., & Lesaux, N. K. (2009). Language-minority learners in special education: Rates and predictors of identification for services. *Journal of Learning Disabilities*, 42, 148-162. Doi:10.1177/0022219408326221
- Thomas, W. P., & Collier, V. P. (1997). Two languages are better than one. *Educational Leadership*, 55(4), 23-26.
- United States Department of Health and Human Services. (2006). *Research-based web design and usability guidelines*. Washington, D.C.: U.S. Government Printing Office.
- Usability.gov (2017). Improving the User Experience. Retrieved from <https://www.usability.gov/what-and-why/accessibility.html>

- Vallar, G., & Papagno, C. (1993). Preserved vocabulary acquisition in Down's syndrome: The role of phonological short-term memory. *Cortex*, 29, 467-483.
- Van Borsel, J. & Vandermeulen, A. (2008). Cluttering in Down syndrome. *Folia Phoniatica et Logopaedica*, 60(6), 312-317.
- Wing, L. (1996). *The autistic spectrum: A guide for parents and professionals*. London: Constable.
- World-Class Instructional Design and Assessment (WIDA). (2014). *Mission and the WIDA story*. University of Wisconsin-Madison: Wisconsin Center for Educational Research. Retrieved from: <https://www.wida.us/aboutus/mission.aspx>
- World Health Organization (WHO). *Genomic research centre: Genes and human disease* (2017). Retrieved from <http://www.who.int/genomics/public/geneticdiseases/en/index1.html>